

WHAT IS CLAIMED IS:

1. A feed screw device comprising:
  - a screw shaft;
  - a nut member threadably engaging an outer periphery of the screw shaft;
  - a lubricant supply device fixed to said nut member, said lubricant supply device coming in contact with the outer peripheral surface of said screw shaft and having a predetermined elasticity; and
  - means for deforming at least the outer periphery of said lubricant supply device in the circumferential direction.
2. The feed screw device according to claim 1, in which at least portion of said lubricant supply device facing the screw shaft is made of rubber or synthetic resin containing a lubricant.
3. The feed screw device according to claim 1, in which said pressing means comprising:
  - a notch formed in the outer periphery side of the lubricant supply device; and
  - an expansion member inserted into said notch for deforming said lubricant supply device in the circumferential direction.
4. The feed screw device according to claim 1, in which said nut member is provided with a recess portion for attaching said lubricant supply device and a retaining ring

for retaining said lubricant supply device within said recess portion.

5. The feed screw device according to claim 4, in which said retaining ring is provided with a recess into which a part of said pushing and widening means are inserted.

6. The feed screw device according to claim 1, in which said lubricant supply device has a cut part at a place in the circumferential direction.

7. The feed screw device according to claim 1, in which said lubricant supply device is provided on the inner peripheral surface with a projection which is fitted into thread groove formed on the outer peripheral surface of said screw shaft.

8. The feed screw device according to claim 1, in which said nut member is provided with a cap-shaped retaining ring which has a recessing portion for accommodating said lubricant supply device.

9. The feed screw device according to claim 4, in which said pressing means comprising:

a notch formed in the outer periphery side of the lubricant supply device; and

an expansion member formed on said retaining ring and inserted into said notch so as to deform said lubricant supply device in the circumferential direction.

10. The feed screw device according to claim 9, in which said notch comprises two insertion holes formed on said

lubricant supply device at a predetermined interval in the circumferential direction, and said expansion member comprises two projections respectively inserted into said two insertion holes,

in which said predetermined interval between said two projections is set slightly smaller than that between said two insertion holes.

11. The feed screw device according to claim 1, in which said lubricant supply device is provided with a plurality of lip parts projected along the circumferential direction toward the inner peripheral surface of said lubricant supply device and come in sliding contact with the outer peripheral surface of said screw shaft.

12. A feed screw device comprising:

a screw shaft;

a screw nut threadably engaging an outer periphery of said screw shaft; and

a lubricant supply device disposed at at least one end of said screw nut in the axial direction of said screw shaft for sealing the gap opening between the screw nut and the screw shaft, and said lubricant supply member being made of a lubricant-containing polymer member,

in which said lubricant-containing polymer member is formed with a lubricant reserve portion.

13. The feed screw device according to claim 12, in which said lubricant reserve portion comprises a plurality of

lubricant reserve holes at positions distant from each other in the circumferential direction.

14. The feed screw device according to claim 13, in which said lubricant supply device further comprises a communication hole for flowing a lubricant reserved in said lubricant reserve holes out directly into outflow opening opened and formed on the inner peripheral surface of said lubricant supply device.

15. The feed screw device according to claim 12, in which said lubricant reserve portion comprises a lubricant reserve groove which is continuously extended in the circumferential direction.

16. The feed screw device according to claim 15, in which said lubricant supply device further comprises a communication hole for flowing a lubricant reserved in said lubricant reserve groove out directly into outflow opening opened and formed on the inner peripheral surface of said lubricant supply device.